

SITUATION REPORT NO. 9
INCIDENT NO. 99-009
DATE: April 21, 1999 TIME: 9:00 a.m.

TO: Governor Edward T. Schafer
State Capitol
Bismarck, ND 58505

1. NATURE OF DISASTER: Spring flooding – Above normal soil moisture content throughout North Dakota, compounded by seven years of flooding, has resulted in overland and river flooding.
2. DEATHS AND INJURIES: No change from previous reports.
3. DAMAGES: The Red River of the North is expected to drop below its 28-foot flood stage at Grand Forks on April 21 and then remain nearly steady at that level. The level at Grand Forks measured 28.23 feet on April 20. Downstream on the Red River, the river measured 39.04 feet at Drayton on April 20 where flood stage is 32 feet and 47.77 feet at Pembina on April 19 where flood stage is 42 feet. The river in Fargo will remain near its 17-foot flood stage because of releases from White Rock Dam.

The lower Sheyenne River is also expected to remain near flood stage at three locations for the next several days as spring runoff continues to enter the river system. The river measured 11.18 feet at Lisbon, where flood stage is 11 feet; 14.78 feet at Kindred where flood stage is 16 feet; and 14.51 feet at West Fargo where flood stage is 16.5 feet.

A preliminary damage assessment in Rolette County indicates that to date floodwaters have caused 80 road washouts and 22 gravel washouts.

In Renville County, a road entering the Mouse River Park area in McKinney Township has water flowing over the road. The road, which was closed April 2, has been flagged. To date, floodwaters have resulted in approximately 100 washouts and the closure of five county roads, three of which have since been reopened.

The Walsh County Highway Department has identified 38 damage sites on three county roads, 27 sites on County Road 2, seven sites on County Road 4 and three sites on County Road 15. In addition, one bridge has been damaged.

In LaMoure County, a leak has developed on privately-owned 16-foot deep dam stocked with fish by the N.D. Game and Fish Department. The dam, located 15 miles north of Kulm, is eroding and in need of repair.

Dickey County officials have identified 27 flood-damaged sites on county and township roads. Erosion from wave action has caused damage to rip-rap, and soft spots have developed on roads in low-lying areas. Farmers have reported that low areas are holding more water than last year at this time.

The city of Eckelson is experiencing high water table problems to include failure of septic systems. As a result, residents have had to pump sewage from the top of the ground. Nearly all of the 13 residences in Eckelson have had pumping take place at sump holes. Wave action on old N.D. Highway 10 is eroding the shoulder and ditches at Sanborn Slough. The highway is closed at Eckelson Lake because of floodwaters. Railroad lines at Eckelson Lake and Sanborn Slough are nearly inundated. Additional damages include 23 township roads that have been either inundated or experienced culvert washouts.

Preliminary estimates by Minnkota Power Cooperative, Inc., indicate that repair costs total \$2.15 million as a result of an ice storm in early April. The impacted area extends from four miles west to six miles east of Valley City. Sixty-four aluminum structures were damaged, with 63 completely

destroyed.

Officials for the Sheyenne Valley Electric Cooperative, Inc., estimate that \$91,865 repair costs will be incurred as a result of that storm within Steele and Griggs Counties.

Nodak Electric has reported an estimate of \$275,000 in damages because of the ice storm.

4. RESOURCES:

LOCAL: No change from previous reports.

STATE: No change from previous reports.

FEDERAL: No change from previous reports.

5. VOLUNTEER ACTION: The Salvation Army will be hosting a "stress night" at 6:30 p.m. April 28 in Devils Lake at the Ramsey County Courthouse Armory Meeting Room. The night is designed to alleviate stress experienced by Devils Lake Basin residents.

The Upper Midwest Recovery has been providing assistance to residents in 10 counties in northeastern North Dakota. Services provided by the relief agency include financial support provided through Catholic Family Services grants of up to \$1,000 for farm families struggling with financial crises. Funding for grants may be exhausted by April 30 because of the heavy demand. Catholic Family Services has received about 350 applications, and will cut off the applications after 450 are received. The Center also has been providing emotional support and assisting with minor home repairs, such as the installation of sump pumps.

6. MAJOR ACTIONS: A State Flood Coordination Center meeting was held in Devils Lake on April 15. Following are summaries of agency reports submitted during the meeting:

North Dakota Emergency Management

Governor Schafer proclaimed a statewide flood emergency on April 14 in response to flooding in Devils Lake and along the Red, James, Sheyenne and Souris Rivers. The announcement followed a revised forecast issued by the NWS calling for Devils Lake to rise up to 3 ½ feet this summer to 1,447 to 1,447.5 feet, approximately one-half to one foot higher than the natural spill elevation between Devils Lake and Stump Lake. The proclamation allows local officials to request help from within local government as well as from appropriate state, federal, and non-governmental sources. State and local emergency management officials are reviewing damages from spring snowmelt. The proclamation is a step toward seeking outside assistance, but does not guarantee eligibility requirements will be met.

The N.D. Civil Air Patrol provided aerial support for surveillance of the Devils Lake Basin by local and state officials on April 15. Officials representing several state agencies (Emergency Management, Transportation, Insurance, Game and Fish, Parks and Recreation) as well as Benson, Nelson, Ramsey Counties and the Spirit Lake Nation took part in the surveillance flights.

N.D. State Water Commission (SWC)

Staff members from SWC and the U.S. Army Corps of Engineers (USACE) are finalizing a draft of a U.S. Congressional interim report containing economic and environmental analyses for the Devils Lake Emergency Outlet Plan. The Fiscal Year 1999 Energy and Water Development Appropriations Act, signed by President Clinton in 1998, contained \$5 million for construction of an outlet from Devils Lake to the Sheyenne River subject to the following provisions: completion of the economic and environmental analyses; a report of findings to Congress; and consultation with the International Joint Commission in reference to the Boundary Waters Treaty. The report will include examination of alternatives to include construction of a gravity outlet from East Devils Lake to Stump Lake and a discussion on the Peterson Coulee alternative outlet plan, including several variations to get fresher water to the coulee in order to minimize downstream water quality impacts.

The National Weather Service (NWS) River Forecasting Center issued the revised forecast for Devils

Lake on April 9 after consultation with other federal and state agencies, including the SWC. As part of their discussions, hydrologists and engineers determined that the lake, if it reaches 1,447.5 feet, would increase by approximately 400,000 acre-feet this summer. Devils Lake has been rising at a rate of 0.05 feet per day, and has risen one foot since January. These daily increases represent a volume increase of approximately 5,500 acre-feet per day, which requires a flow of 2,770 cubic feet per second (CFS). Evaporation levels that have occurred on the lake since 1993 are 40 percent below normal.

During the aerial surveillance of the Devils Lake area on April 15, SWC engineers observed large amounts of water in the northern and western portions of the basin. Flooding along the Chain of Lakes is so extensive that it is difficult to discern each lake's boundaries. Floodwaters are also backing up at Churchs Ferry into Lake Irvine.

Devils Lake measures 1,445 feet, approximately 1.6 feet below the natural spill elevation between Devils Lake and Stump Lake. If Devils Lake reaches 1447-1447.5, SWC engineers estimate the park flow going to Stump Lake will be 50-100 CFS which would raise stump lake from 2 to 5 feet by the end of the year.

Following is a list of road crossings between Devils Lake and Stump Lake, including culvert sizes and road elevations. The road on the Ramsey-Nelson County line provides the least flow, with a 24-inch culvert, which would pass approximately 18 CFS with one foot of head across the culvert.

Culvert Locations	Size (flow amounts)	Top Road Elevation
East Devils Lake, south half of Section 28	60 in. cmp*	1,448 feet
Three culverts – North half of Sections 26, 27	1. 24 in. cmp 2. 36 in. cmp 3. 36 in. cmp	1,448.5 feet
South half of Sections 24, 19	24 in. cmp	1,449.75 feet
Extreme north of Sections 29, 30 crossing	36 in. rcp**	1,447.5 feet
North half of Sections 28 and 29 crossing	1. 36 in. rcp 2. 26 in. cmp	1,442.5 feet

* Corrugated Metal Pipe

** Reinforced Concrete Pipe

The SWC plans to extend its Available Storage Acreage Program (ASAP) for another year. Through ASAP, landowners are reimbursed for storing Devils Lake water on their land, thus reducing the amount of water in the lake. Last year, landowners stored over 21,000 acre-feet of Devils Lake through the program. The SWC will be partnering with the Wetlands Trust for water storage. Plans call for the SWC to help with engineering and development of water storage structures and for the Wetlands Trust to work with landowners on 10- to 15-year contracts for water storage.

Devils Lake Joint Water Resource Board

Stream flow measurements on Devils Lake tributaries measured as follows on April 15: Mauvais Coulee near Cando, 1,580 CFS; Edmore Coulee near Edmore, 259 CFS (peaked on March 31 at 812 CFS); Starkweather Coulee near Starkweather, 483 CFS; and Channel A Flow, 550 CFS. The elevation of both Lake Alice and Lake Irvine measured 1,447.86 feet.

North Central Planning Council (NCPC)

The Benson/Ramsey Urgent Needs Temporary Diking Program continues, although funds are limited for this year. Under this cost-share program, homeowners pay one-third of the cost for a temporary dike, and the program pays two-thirds up to \$2,000. The grant provides temporary protection and/or access to a homeowner's property. The Community Development Block Grant (CDBG) funding helps to pay for the program.

Emergency utility services for Mercy Hospital in Devils Lake has been completed. This project provided Mercy Hospital with an alternative water supply and an emergency septic system to be used in the event of a catastrophic occurrence. The project cost is approximately \$123,000 with 80 percent funding from CDBG supplemental funds.

The Cliff's Subdivision Waterline Loop has also been completed, providing equalized water pressure to the subdivision. Water pressure problems developed after lakeshore homes were relocated to the Cliffs Subdivision.

NCPC continues to work with Ramsey County Rural Utilities on the relocation of flood-threatened rural sewer lines located along the Devils Lake lakeshore. CDBG funds are being used to match USACE funds.

NCPC has completed a report on lakeshore structures and their elevations for Ramsey and Benson Counties including the city of Minnewaukan. The report identifies types of structures and their elevations up to an elevation of 1,460 feet. NCPC obtained data through use of a hand-held altimeter, mail, telephone surveys and a certified land surveyor's report. Elevation findings are as follows:

Elevation	Ramsey County		City of Minnewaukan		Benson County
	Homes	Others*	Homes	Others	All Structures**
Below 1,446 ft.	11	3	0	0	0
1,446+ 1,448 ft.	14	6	3	0	1
1,448+ 1,450 ft.	10	14	7	2	5
1,450+ 1,455 ft.	17	7	12	7	10
1,455+ 1,460 ft.	26	5			7

* Other structures include sheds, garages, quonsets, gazebos and barns.

** All types of structures were included in the Benson County count.

North Dakota Highway Patrol, Devils Lake Office

The North Dakota Highway Patrol continues to work closely with local law enforcement officials to facilitate safe travel through areas affected by flood and road construction.

N.D. Department of Transportation (N.D. DOT), Devils Lake District

If Devils Lake rises to its predicted peak of 1,447 to 1,447.5 feet, this summer, these elevations should not directly threaten any of the state highway crossings. However, all crossings currently are at a minimum elevation of 1448.5 feet or higher. DOT staff members expect that higher water elevations will cause some serious travel problems on windy days. Waves may splash on roadway surfaces, possibly depositing small rocks, gravel, weeds, and/or dead trees. If extremely high winds are experienced, some lake crossings may be temporarily closed for safety precautions. Also, waves may splash over the top of existing rip-rap protection and may cause erosion damage to highway shoulders. To cope with these potential problems, the Devils Lake District is making plans to increase surveillance of the lake crossings to identify problems, inform the public, and to initiate corrective action.

The Devils Lake District will arrange emergency projects to raise rip-rap elevations on the most vulnerable crossings and/or to repair erosion damage that may occur after ice is out on the lake. The district has prepared plans for this work which may cost approximately \$1.5 million; no emergency funding is currently available for this work.

The contractor for the N.D. Highway 57 Narrows grade raise and bridge construction has indicated that work will commence on the bridge in about three weeks. It is hoped the bridge will be completed by mid-August.

DOT is planning on letting contracts for hot bituminous pavement on portions of N.D. Highways 20 and 57. The portion of N.D. Highway 57, west of Bureau of Indian Affairs (BIA) Road 15, will be scarified, double primed and sealed. With the completion of the Narrows project, and this additional work, area highways should all be open and in good traveling condition (with the possible exception of windy days).

N.D. National Guard

National Guard officials with Camp Gilbert C. Grafton are concerned that a rising Devils Lake will compound erosion problems on the southwest shoreline of the camp. Significant erosion is already occurring on rip-rap in the area.

North Dakota Insurance Department

Following the updated flood forecast for Devils Lake, department officials issued a news release encouraging consumers to give serious consideration to the purchase of flood insurance.

N.D. Parks and Recreation Department, Devils Lake State Parks

Staffs at the Devils Lake State Parks expect the following damage based on the forecasted peak for this summer.

Shelvers Grove: Vehicle access to the eastern half of this park will be flooded, and public use of the day use and the picnic shelter areas will be lost. The parking area and handicap access to the picnic shelter will be flooded. Flooding of the campground storm drain system will allow water to remain in the interior of the campground. Sections of the campground road are at 1,448.5 feet, thus problems may occur on windy days. A section of the campground entrance road will require placement of rip-rap to protect access to the campground.

Grahams Island: Parks staff members are currently evaluating the electric service for the campground area. The high levels may cause some problems on windy days because of wave action from Devils Lake. Four primitive campsites will be flooded, and the projected lake level threatens three modern campsites. Several sections of the parks interior roads will experience erosion and will require rip-rap protection. The sewer system for the one of the park residences is threatened.

Black Tiger Bay: The elevation of the boat ramp is at 1,448 feet. The lake level will cause serious erosion problems in the parking and boat access area, requiring rip-rap and other protective measures.

N.D. Game and Fish Department, Devils Lake Office

Based on the Devils Lake forecasted peak level, staff at N.D. Game and Fish Department anticipate the following repair work will take place to boat ramps:

East Bay - The top of the ramp site is about 2 feet above the current lake level. This site will have to be raised or relocated.

Black Tiger Bay - At an elevation of 1,448 feet, the ramp may remain functional through this year with some dirt work needed to raise the access road.

Graham's Island - No construction is needed as the top of the ramp is at 1,452 feet.

Six-Mile Bay - The top of this boat ramp is at 1,450 feet.

Minnewaukan Site -- This site will have to be raised or relocated. It is presently at 1,446 feet.

Creel Bay (Lakewood site) - No construction is needed as the top of the ramp is at 1450 feet.

Creel Bay (Levee site) - A new boat access site is planned for the north end of Creel Bay near the levee. At this time the completion date is unknown.

Nelson County Emergency Management

Nelson County Highway Department crews cleared a logjam April 3 on the Sheyenne River south of Pekin. The logjam caused temporary flooding of roads in Nesheim Township.

Individual property at risk if Devils Lake flows toward Stump Lake includes a farmstead at 1,438 feet and another at 1,439 feet. The property owners have flood insurance.

Benson County Emergency Management

A small section of the Grahams Island Road may need rip-rap work this summer. The road is currently at 1,450 feet.

The Woods-Rutten Road has been elevated to 1,450 feet. Officials will be monitoring road conditions.

Three bridges that cross the Mauvais Coulee, installed three years ago, are at risk of inundation.

Floodwaters have inundated two Federal Aid System (FAS) roads. An 800-foot section of the Brinsmade Road is under water, and Filmore Road by Silver Lake has also been impacted by floodwaters. The Benson County Highway Department is conducting an initial damage assessment of inundated roads and culvert washouts. Erosion and high water tables are creating many soft areas on public roads.

City of Minnewaukan

The city of Minnewaukan is operating under an emergency declaration as a result of its proximity to Devils Lake. The city not only is threatened by water coming across the land into the city limits, it is waging a battle against the lake's hidden damages. The hydrostatic pressure of the lake has raised the water table in the city and raised the salts level of that groundwater, causing damages to the city's water and sewer system and streets.

To deal with this emergency, a gate will be installed in a culvert on the north end of town to keep lake water from flowing into the city. The Benson County Emergency Manager has set sandbags and pumps aside.

More than a dozen manholes have been affected by the lake's intrusion into the groundwater. The saline groundwater has eaten the bottoms out of the manholes. Most of the city's manholes are beneath the surface level of the lake. The city has contracted with Municipal Industrial Contractors, Inc. of Moorhead, MN, to repair these manholes at a cost of approximately \$15,000. Work is

scheduled to begin on this project April 19. Plans are to abandon several manholes located in the lower parts of the city. This will be done within 30 days.

The city's cast iron water lines have also been corroded by the salty groundwater. City officials are in the process of getting bids on replacing two blocks of city water mains because of severe corrosion.

The city's streets have also been affected by the high groundwater. The subgrade has become saturated and needs to be replaced before repairs to the asphalt and sealing can be done. Streets have continued to deteriorate, and the city is in the process of completing an engineering report on the entire city. City officials recommend downgrading some streets from asphalt to gravel. The City Council also adopted minimum design standards for hard surfaced streets at its April 14 meeting.

City of Churchs Ferry

In Churchs Ferry, floodwaters from the Mauvais Coulee have been eroding the embankment the Burlington Northern Santa Fe Railroad on north side of railroad tracks. Railroad officials have indicated verbally their intentions to raise the tracks.

The USACE has awarded a contract to add to the lake level protection in place to protect the city of Churchs Ferry. The protection was built to a level of 1,449.5 feet and will now be raised to 1,453 feet. The contractor anticipates completing the work by April 23.

Ramsey County Emergency Management

The Ramsey County Emergency Manager has been promoting flood insurance.

Several critical areas in the Devils Lake area have been identified to include:

N.D. Highway 20 South -- North of Camp Grafton's main entrance, potential problems could develop because the road may be holding back floodwaters, which could flood nearby homes and Military Road.

Creel Bay (eastside) --Floodwaters could inundate Lakewood, flooding several homes and roads and result in sewer-related problems. Some homes have been in the area for more than 50 years.

Home Loss -- Ramsey County officials estimate that 25 to 30 homes, valued at approximately \$2.5 million, could be lost if Devils Lake reaches its potential crest.

The Ramsey County Commission has hired a special deputy to enforce load restrictions on county roads. During the past seven years major damage has occurred on county blacktop and gravel roads with extreme damage to township roads.

The new county base flood elevation has been established at 1,455 feet on shorelines.

Red Cross and Salvation Army cleanup kits have been distributed to residents of Edmore, Brocket and Lawton.

Ramsey County Rural Utilities

Ramsey County Rural Utilities lost four sewer accounts on Christmas Day 1998 when a section of sewer pipe, which is located under Devils Lake, broke. Four more accounts on the same line are also in danger of losing their service. The lift station servicing these accounts had been moved and raised, but the main lines are now under water.

The utility company is planning a major sewer relocation around the Woodland Resort area

consisting of one lift station and 4,000 lineal feet of forcemain and gravity sewer line. The lake has come within five feet of the main sewer line in this area.

Utility workers finished a water and sewer relocation in the Foughty-Acorn Ridge area late last fall.

Ramsey County Highway Department

Most of flooding-related problems are taking place in the Churchs Ferry area, where a FAS road was closed because of inundation.

City of Devils Lake

City of Devils Lake officials have been working with the USACE to raise the lake level protection for the city from 1,450 to 1,457 feet. Permanent pumping stations at East Ditch and Eagle Bend are not operational at this time. Temporary facilities are in place at East Ditch with two larger pumps and the capability for two more pumps if needed.

Ground water monitoring continues at several locations around the city. The city has experienced an increase in water tables as the lake rises.

Two major storm sewer replacement areas are scheduled to get underway this summer, with plans and specifications ready this spring.

City officials have been working with FEMA on development of a new Flood Insurance Rate Map (FIRM).

The city is also developing an inventory of pumps and flood-fight equipment.

Northern Plains Electrical Cooperative

Since September of 1998, Northern Plains Electric Cooperative has installed 80 side guys and swamp anchors on poles presently located in Devils Lake floodwater and are difficult to relocate because of distance or customer location. Also installed were 0.75 miles of underground line north of N.D. Highway 19 to replace a line destroyed by rising water. This line will be the primary feed into this area; all other sources are in potential problem areas.

The Cooperative currently has two major substation feeders in water. The first, a three-phase underground feeder out of the Lallie Sub, is installed along U.S. Highway 281 south of Minnewaukan. The second line is an overhead three-phase feeder going east out of the Churchs Ferry Sub. The cooperative is in the process of developing a four-year work plan, and these feeders will be addressed in that plan. The Cooperative presently has an emergency plan that will pick up the load if either of these feeders fail.

U.S. Army Corps of Engineers (USACE)

Late last year, the USACE received final approval to elevate the lake level protection system for the city of Devils Lake from a top-of-levee elevation of 1,452 to 1,457 feet. Project cost is estimated at \$5 million. Work on elevating the levee is being completed in phases. USACE officials expect that phase of the project to be completed by September.

On an earlier phase of the lake level protection project, earthwork and rip-rap to elevate the levee to 1,452 feet has been completed. But work is ongoing on efforts to install two pumping stations. While three of the five pumping stations required for the project have been completed, work is ongoing on the remaining two, East Ditch and Eagles Bend. East Ditch is scheduled to be operational by summer and Eagles Bend should be completed by September. Cost of this portion of the levee raise totaled approximately \$36 million.

Engineers for the St. Paul District of the USACE have been providing technical assistance to the city of Churchs Ferry. The USACE has also provided for pumps to the Spirit Lake Tribe.

Spirit Lake Nation

The Spirit Lake Tribe was not represented at the State Flood Coordination Center meeting.

1999 Spring Flood Actions

The Walsh County Highway Department has several crews working on County Road 2, including one team that is assessing damage. A second team is removing debris, a third team is pumping water out of washouts in the road, and a fourth team is pushing material back into potholes to establish driving lanes. These measures will allow rural residents access to their farmsteads and will provide a route for emergency vehicles if needed. Engineers are evaluating a leak on a dike on U.S. Fish and Wildlife land at Lake Ardoch.

In Dickey County, workers in the city of Ludden have dug a ditch to drain ground water and possibly lower the water table.

The Barnes County Health Department is assessing sewer-related problems at Eckelson. The Highway Department placed rocks in the ditch along old N.D. Highway 10 at Sanborn Slough.

The Towner County Commission issued a disaster declaration on April 15. Since the last Situation Report, emergency declarations have also been issued by Benson County and the city of Minnewaukan.

7. ASSISTANCE NEEDED: Assistance has been provided, as reported.
8. OUTSIDE HELP ON SCENE: USACE, Red Cross, consulting engineers and members of the N.D. Volunteer Organizations Active in Disaster (VOAD).
9. OTHER: The next State Flood Coordination Center meeting has been scheduled for Thursday, May 13, at the Ramsey County Courthouse Basement Meeting Room.

Situation Reports published by the N.D. Division of Emergency Management are posted on the Division's Internet home page. The address is: <http://www.state.nd.us/dem>.

Douglas C. Friez, State Director